

**PANOLIS FLAMMEA D. & S. (LEP.: NOCTUIDAE): ITS FORMS  
AND THEIR INCIDENCE IN NORTH-WEST KENT**

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RECENTLY CONSIDERING this species in relation to the incidence and decline of melanism in this area I was surprised to find that the standard textbooks in current use were at variance with my perception of the species being essentially trimorphic with three distinct named forms – *flammea* D. & S., *grisea* Tutt and *griseovariegata* Goeze (Plate H, Figs. 9, 10, 11); the moth has also been known as *piniperda* Panzer, a reddish form like *flammea*. Heath (1979) describes *flammea* and *griseovariegata*, the latter as “having the forewing suffused grey and greenish-grey” and states that the two forms and intermediates co-exist throughout the range. Similarly Skinner (1984) also states that *griseovariegata* is “a greyish form found commonly throughout the species’ range”. Thus it has not been appreciated that *griseovariegata* is the intermediate form, due to an apparent unawareness of f. *grisea*. The misconception seems to stem from Goeze (1781) and from Tutt (1892) whose descriptions leave much to be desired. Goeze describes *griseovariegata* in both French and German, the French rendering being “*ailles rabatues grises tachetées de jaune orange, avec deux grandes taches blanches sur chacune*”. Goodson and Read in their unpublished work upon which the arrangement of the National Collection is based interpret this with some licence as “intermediate between the red and grey forms, the red and grey mingled”, a concise and accurate description of such specimens. Secondly, Tutt leaves much room for clarity in his attempt to establish f. *grisea*, stating “I am not certain whether this is Göze’s type of *griseovariegata* but it is certainly the Var. A of Guenée who writes ‘the red colour almost completely disappears, and is replaced by greenish-grey, the stigmata also shaded slightly inside with the same colours’.” Tutt concludes that in England a fair proportion of specimens is of this variety. So Tutt does not formally describe his grey form, and one wonders why he found it necessary to establish a grey form under his name knowing it to have been described by Guenée and perhaps by Goeze, unless he considered “Var. A” an unsuitable appellation!

However, f. *grisea* has been acknowledged. Kettlewell (1973) lists it as a non-industrial melanic, widespread throughout its range. Goodson and Read (*ibid*) describe it as having “the red colour almost completely absent and replaced by greenish-grey”. The arrangement of the National Collection is based upon this work and includes two rows of such specimens, labelled *grisea*, a similar number of f. *flammea*, reddish with an absence of grey scaling, and a very much larger series of intermediates, with varying proportions of reddish and grey, labelled *griseovariegata*. My one criticism of this scheme originates from

Guenée's description of his Var. A, later adopted by Tutt, and in turn by Goodson and Read, is the inclusion of the adjective "almost". It would have been simpler to have omitted such qualification which has introduced unnecessarily a subjective element, for the series of f. *grisea* in the National Collection almost entirely comprises grey only specimens, the few exceptions possessing a submarginal band on the forewing of a deep purplish hue that would not be interpreted as reddish.

The confusion in the textbooks has had repercussions elsewhere, including the very few works so far published of a local nature. Plant (1993) for the London area follows the standard textbooks in assessing the relative frequency of the forms of this species, only f. *flammea* and f. *griseovariegata* being mentioned, to occur apparently in roughly equal numbers in most area. Although Chalmers-Hunt (1961) for Kent often comments upon the frequency and distribution of forms of polymorphic species, regarding *P. flammea* he is silent. These two omissions are unfortunate, for by my treating the moth as being trimorphic, comparisons cannot be made accurately between north-west Kent and the remainder of Kent and other parts of the London area, where this has not been done.

However unsatisfactory the original definitions of two of the three forms may be, this classification seems to be correct genetically, *flammea* and *grisea* representing the homozygotes, and *griseovariegata* the heterozygotes, although these grey specimens with a purplish submarginal band pose a problem which can only be solved by careful breeding. I have considered them as *griseovariegata*, and have restricted the term *grisea* to those specimens in which the ground colour of the forewing is restricted to various shades of grey.

At Dartford the species is a regular visitor in small numbers to my m.v. light, and over the past twenty-seven years 78 specimens have been noted – 94% *griseovariegata*, 5% *flammea* and 1% *grisea*, in considerable contrast to the analysis for the London area in general of 50% *flammea*. Although Kettlewell lists f. *grisea* as a melanic form in Britain, I think this is an over-simplification for many *griseovariegata* appear darker than average *grisea*, especially specimens with a dark purplish submarginal fascia combined with a dark greyish and purplish-red ground colour. Considering the high level of atmospheric pollution here it is perhaps surprising that f. *grisea* occurs only as a rarity.

My acquaintance with *P. flammea* is mainly limited to Kent and the counties of Inverness-shire and Moray in Scotland. Moths examined at Aviemore, Carr Bridge and Grantown-on-Spey have shown f. *griseovariegata* to be the commonest, f. *flammea* quite common, and f. *grisea* rare, indeed, the only specimen of this form in my collection was obtained from Aviemore, 22.iv.1971.

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relevant literature, and to the staff of the Entomological Department library for their assistance. I am also grateful to Mr David Wilson for the photography of the specimens depicted in Plate H.

#### References

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#### BOOK REVIEW

**The Moths and Butterflies of Great Britain and Ireland, Volume 3 - Yponomeutidae to Elachistidae.** Edited by A. Maitland Emmet. Harley Books, 1996. 454 pp., including 11 colour plates, 8 duotone plates of larval cases, several hundred text figures and 240 distribution maps. Hardbound: ISBN 0 946589 43 7. £70, rising to £75 on 1 January 1997.

This is surely one of the most eagerly awaited volumes in this excellent series. It covers the 240 British species in the families Yponomeutidae, Glyphipterigidae, Epermeniidae, Schreckensteiniidae, Coleophoridae and Elachistidae - some of which have never before been comprehensively treated in the British literature.

The systematic section follows the established format of a full description, details of life history and a distribution map. There is an introductory chapter entitled "Invasions of Lepidoptera into the British Isles" by David Agassiz, which is very interesting and extremely well written. A particularly helpful inclusion under each family in the systematic section is an up to date synonymic check-list of species. This takes into account the great many changes in nomenclature in recent years and is cross-referenced to the life history chart in volume 7, part 2, by the use of the Bradley and Fletcher reference numbers. Also included is the latest scheme for the classification